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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,825	10/17/2003	Gunter Heidrich	P03,0416	2366

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SCHIFF HARDIN, LLP
PATENT DEPARTMENT
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EXAMINER

HO, ALLEN C

ART UNIT	PAPER NUMBER
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2882

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/688,825

Applicant(s)

HEIDRICH, GUNTER

Examiner

Allen C. Ho

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 052004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

Page 4, line 14, "5" should be replaced by --7--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, and 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Andrews *et al.* (U. S. Patent No. 6,115,454).

With regard to claim 1, Andrew *et al.* disclosed an x-ray tube having a metallic vacuum housing (14, 30) containing an anode (18) and a cathode (16), the improvement comprising a surface (21) of the metallic vacuum housing having a plurality of notches (32) therein.

With regard to claim 2, Andrew *et al.* disclosed the improvement of claim 1, wherein the surface is inside the metallic vacuum housing.

With regard to claim 6, Andrew *et al.* disclosed the improvement of claim 1, wherein the notches are lattice-shaped (regularly spaced).

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With regard to claim 7, Andrew *et al.* disclosed the improvement of claim 1, wherein the notches are located where electrons, of the electron beam, which are scattered when striking the anode, most likely strike the surface of the metallic vacuum housing (column 3, lines 45-54).

With regard to claim 8, Andrew *et al.* disclosed the improvement of claim 1, wherein the metallic vacuum housing comprises a chamber containing the cathode, a volume containing the anode, and a shaft-shaped housing section (22), through which the electron beam proceeds from the cathode to the anode, connecting the chamber to the volume.

With regard to claim 9, Andrew *et al.* disclosed the improvement of claim 8, wherein the notches are located around a region where the shaft-shaped housing section meets the volume.

4. Claims 1, 8, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Artig (U. S. Patent No. 6,134,299).

With regard to claim 1, Artig disclosed an x-ray tube having a metallic vacuum housing (column 2, lines 18-22) containing an anode (16) and a cathode (24), the improvement comprising a surface of the metallic vacuum housing having a plurality of notches (between the fins 34) therein.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andrews *et al.* (U. S. Patent No. 6,115,454) as applied to claim 1 above.

With regard to claims 3 and 4, Andrew *et al.* disclosed the improvement of claim 1. However, Andrew *et al.* failed to disclose the depth of the notches and the distance between the notches.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide notches that are less than 0.3 mm deep and separated by a distance between 0.5 mm and 1 mm, since a person would be motivated to provide notches that would fit inside the annular shield structure (22).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- (1) Chidester (U. S. Patent No. 6,819,741 B2) disclosed a metallic vacuum housing comprising a plurality of notches.
- (2) Andrews (U. S. Patent No. 6,400,799 B1) disclosed a metallic vacuum housing comprising a plurality of notches.
- (3) Lu *et al.* (U. S. Patent No. 6,594,341 B1) disclosed a metallic vacuum housing comprising a plurality of notches.
- (4) Koller (U. S. Patent No. 6,438,208 B1) disclosed a metallic vacuum housing comprising a plurality of notches.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen C. Ho whose telephone number is (571) 272-2491. The examiner can normally be reached on Monday - Friday from 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached at (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Allen C. Ho
Primary Examiner
Art Unit 2882

18 February 2005